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Reprinted from
LLOYDIA
Volume 15, No. 2, June, 1952

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Dictyosporium was described by Corda in 1836 in Weitenweber's *Beiträge* (4) with the single species, *D. elegans;* and *Speira* was described one year later by the same author (5) again with a single species, *S. toruloides*. Since *Dictyosporium* is best known from its discussion in the *Icones Fungorum* (6), it is to this rather than to the original description that reference will be made here. *Cattanea* was described at a considerably later date by Garovaglio (11) with the single species, *C. hepatospora*. There is, therefore, no question but that these are the type species of their respective genera; and with the descriptions and illustrations in the *Icones* and the illustrations accompanying the original description of *Cattanea*, all three are readily available for comparison. The figures of *D. elegans*, however, are somewhat formalized and leave much to be desired by anyone trying to interpret tham.

At the present time, two of these genera—*Dictyosporium* and *Speira*—are recognized, Penzig (19) and Saccardo (21) having been followed in their reduction of *C. hepatospora* to the synonymy of *S. toruloides*. Saccardo (21) has also been followed in considering spore branch separation in *Speira* and spore branch adherence in *Dictyosporium* as the distinguishing characters of these genera. That this distinction was correct is purely accidental since Saccardo based his interpretation of *Speira* upon the organism Garovaglio had described as is borne out by Penzig's discussion in *Michelia* (19) and by Fig. 904 of the *Fungi Italici*, labelled *S. toruloides*, both of which clearly refer to *C. hepatospora*. Because of this error on Saccardo's part, as shown by studies of specimens unmistakably identical with Garovaglio's fungus and of the type specimen of *Speira toruloides* Corda, a reconsideration of both *Dictyosporium* and *Speira* was deemed advisable to re-establish Corda's concepts of them and to determine the validity of Saccardo's distinction when applied to these genera when correctly understood.

A more recent, and in many ways more correct, statement regarding *Speira* and *Dictyosporium* is to be found in the discussions by Gueguen (12) and Chenantais (3). These authors do not accept the generic value of the distinction mentioned by Saccardo, and have regarded *Speira* as a synonym of *Dictyosporium*. In fact, they point out that such a suggestion was made much earlier by Bonorden (2), but that it never gained acceptance. Although Gueguen made the combination, *D. toruloides* (Corda) Gueguen, it should be noted that both he and Chenantais erred in placing *D. elegans*, the earlier name, in the synonymy of this species. I have agreed with the substance of the

[1]This paper, in its original form, was a portion of a thesis submitted to the faculty of the Graduate College of the State University of Iowa in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

French argument except as noted regarding the synonymy, and have adopted Gueguen's change here. It should be understood, however, that the interpretation of one of these authors (Chenantais) has been based upon specimens which are not in very close agreement with the type specimen of *S. toruloides*. He has presented illustrations of the fungi he studied and they represent specimens found in some European *exsiccati* under the name, *D. elegans*, e.g., *Fungi bavarici* No. *500* and Rabh.-Pazsch. *Fungi europaei* No. *4194* (Fig. 1, A and B). These spores most nearly resemble the spores of *S. toruloides* but are quite unlike those to be found in the type of that species.

A third, and entirely different, interpretation of *Dictyosporium* is mentioned only because it was the view held by myself at the time of a previous report (7). This was based upon specimens possessing large, dark-colored dictyospores which could have been placed in any one of several vaguely defined genera, but which also seemed to bear a resemblance to Corda's formalized illustrations of *D. elegans*. After an examination of the type specimen, I have since been able to identify these with *Sporidesmium concinnum* Berkeley. Lacking type material of *Dictyosporium* and *Speira* it would have been possible to accept any one of these views as correct; but the difficulty was resolved by the loan of two specimens of *D. elegans* and one of *S. toruloides* from the Corda herbarium (20) in Prague. The spores of all these specimens are illustrated in Fig. 1, F, G, and J. The separation of the branches in spores of *S. toruloides*, mentioned by Saccardo, is immediately apparent; but equally obvious is the similarity to *D. elegans* in all other respects. Furthermore, a slight separation of the branches in the spores of *D. elegans* has also been observed, and has been substantiated by examination of other specimens referable to this species. I am maintaining the two species as distinct, though congeneric, because of the similarity in general morphology of their spores; and because the separation of the branches in *D. elegans* is by no means as apparent or as frequently observed as it is in *S. toruloides*. The spores of *S. toruloides* are also more irregular in shape and construction than are those of *D. elegans* which are, in general, flat and composed of parallel rows of cells. With the exception of *S. toruloides*, the species of *Dictyosporium* are characterized by having flat, U-shaped conidia composed of several parallel branches arising from a single basal cell in the cell by cell manner previously described (7). The conidia of *S. toruloides* may be flat or branched in all directions; but even in this species the flat nature of the conidium, if used with reservation, serves as a useful key character. There is some indication that the spores of some specimens bear a resemblance to those of *Thrysidium*, though in all examples studied enough typical conidia have been seen to dispel any doubts with might arise.

The fungus described by Garovaglio as *Cattanea hepatospora* is, in many ways, different enough to warrant separate generic recognition; but because the spores have the same general morphology and are formed in the same manner it is considered a species of *Dictyosporium*. In this I am following Lindau (14) who recognized it as a valid species and not a synonym of *S. toruloides* as Saccardo had done. The spores differ from those typical of *Dictyosporium elegans* in that they are cylindrical rather than flat; and the branches, though coherent, are

independent and easily separable. The cylindrical appearance of the spores is the result of the circular arrangement of the branches around the upper portion of the single basal cell from which they arise in a cell by cell manner. The branches are more regular in form than are those of the spores of *Dictyosporium elegans*, and they are slightly curved and may or may not have constrictions at the septa. They also separate easily when pressure is applied to the coverslip, as opposed to the irregular ruptures which appear in the spores of *D. elegans*. A second species described here as new is very close to *C. hepatospora*, differing in having much smaller spores which are slightly less cylindrical in appearance.

Other genera which deserve mention here are *Synphragmidium* Strauss and *Botryosporium* Schweinitz. Both of these have been referred to the synonomy of *Speira* by Saccardo (21). I know *Synphragmidium* only from the original description and from the species attributed to it by Peck (18), *S. effusum*, which I have reduced to the synonymy of *D. toruloides*. I have, therefore, included *Synphragmidium* as a questionable synonym of *Dictyosporium* with the realization that that may not be its ultimate disposition. It is possible to consider *Botryosporium* more thoroughly because the type specimen of *B. prorumpens* Schweinitz has been examined. Schweinitz' generic name is a later homonym of *Botryosporium* Corda, and has been incorrectly referred to the synonymy of *Speira*, following Saccardo. Although the details of this matter are considered later, suffice it to say that it no longer need be regarded as a synonym of either *Speira* or *Dictyosporium*.

Having established the limits of *Dictyosporium* we may now proceed to a detailed consideration of the valid species insofar as material has been available for study.

DICTYOSPORIUM Corda, Weitenweber's *Beiträge* 1: 87. 1836. ill.; also in *Icones Fungorum* 2: 6. 1838. ill.

Speira Corda, *Icones Fungorum* **1**: 9, fig. 140. 1837.
?*Synphragmidium* Strauss, Sturm's Deutschlands Flora iii: VII: **34**: 41. 1853.
Cattanea Garovaglio, Rend, Real. Ist. Lomb., 2 ser. **8**: 125. 1875. ill.

Sterile hyphae within the substratum or sparse on the surface, effuse, hyaline to dark-colored, septate, branching; conidia effuse or in sporodochia; conidiophores reduced to very short branches on assimilative hyphae; conidial branches formed by the division of the termainal cell of the conidiophore in a cell by cell manner, branches multicellular, arising (for the most part) from a single basal cell although sometimes obscurely so, fusing laterally or not at maturity, more or less parallel, usually constricted at septa, rarely slightly incurved at the tips; at maturity flat, dark-colored, usually U-shaped, morphology irregular in one species (*D. toruloides*); sterile setae may be present in one species (*D. chilensis*).

KEY TO THE VALID SPECIES OF DICTYOSPORIUM STUDIED

1. Conidia borne in sporodochia or sporodochioid clumps 2
1. Conidia borne on effuse conidiophores 5
2. Spores flattened, never cylindrical, branches never separating 3
2. Spores typically cylindrical, branches separating easily, tips sometimes "hooked" 4
3. Sporodochia large (0.5–1 mm) spores appearing ovoid, spores approximately 2 times as long as wide . . . . . *zeylanicum*

3. Sporodochia small (less than 0.2 mm), spores approximately as wide as long ..... *polystichum*
   4. Spores large, usually greater than 50 μ in length ..... *hepatosporum*
   4. Spores smaller, less than 50 μ in length ..... *prolificum*
5. Conidia few-branched (1–5), usually 2–3, not separating, spore length usually more than three times width ..... *minor*
5. Conidia many-branched, usually more than 5, not separating, spore length usually not more than two times width 6
   6. Spore not typically flattened, or if flattened having branches which become distinctly separated from one another ..... *toruloides*
   6. Spores typically flattened in front view, branches usually not separating, or only slightly so ..... *elegans*

DICTYOSPORIUM ELEGANS Corda, Weitenweber's *Beiträge* **1**: 87. 1836. ill.[1]

Dictyosporium opacum Cooke & Harkness, Grevillea **12**: 95. 1884.
?*Dictyosporium secalinum* Delacroix, Bull. Soc. Myc. Fr. **7**: 109–110. 1891. ill.

Sterile hyphae usually within the substratum, effuse; conidia U-shaped, 3–9 branched, branches usually parallel, rarely otherwise, usually arising simultaneously, often laterally fused at maturity, tips of branches rarely slightly incurved, multiseptate, constricted at the septa, dark-colored conidia measuring 25–68.5 (–86) x 8–28 (–41) x 6–13 μ.

This fungus appears to have a widespread distribution in the north temperate zone on rotting woody or herbaceous plant material. It is highly probable that it has a greater distribution than is now known.

TYPE LOCALITY: Reichenberg, Bohemia.

It was found after examination of several specimens that there are two spore-size groups within the species, but because they are not clear cut the measurements given above represent those of all specimens assigned here. The measurements of the two specimens from the Corda herbarium were 29–56 x 8–28 x 6–13 μ. The spores illustrated in Fig. 1, F are those of an authentic specimen and those in Fig. 1, G are those of the type. Of the other specimens examined, that collected by Langlois and labelled *D. elegans* (No. *2471* Fig. 1, E) has spores most closely resembling those of the type although the growth is slightly more profuse than is found on the type specimen.

A single specimen has been examined which might possibly be separated as a distinct species. The conidia of this specimen (FH, labelled *S. effusa*, see below) are morphologically identical with those of other specimens of *D. elegans* and agree favorably with the type; but measure 57–86 x 36–41.5 μ, according to a note on the packet by Dr. Linder with which I agree. These spores are larger in all of their dimensions than those of other specimens of *D. elegans*, a fact which has often been warrant enough for describing a new species. I have preferred to leave this specimen under *D. elegans* because spores in this species are formed in a cell by cell manner, a method which, under optimal conditions, might easily allow greater spore growth than is usually encountered. These wider limits of spore dimension have been indicated in parentheses in the description.

[1](Citation in Saccardo *Sylloge* **4**: 513. 1886. is incorrect); see also *Icones Fungorum* **2**: 6. fig. 29. 1838.

D. opacum Cke. & Hark., as well as the fungus referred to this species by Mangin (15), is regarded as a synonym of *D. elegans*. The spores of the type specimen of *D. opacum* are figured in Fig. 1, H and are in no way different from the type of *D. elegans* or from those of Langlois' specimen. The spores have the same morphology and measure 36.5–57 x 21.5–36.5 μ.

I am referring *D. secalinum* Delacroix (8) to this species as a tentative synonym because there is nothing in the description to distinguish it from the type of *D. elegans*. Delacroix reported this fungus occurring on *Secale* and illustrated it with the conidiophore attached to the distal rather than the basal end of the conidial branches.

SPECIMENS EXAMINED: CZECHOSLOVAKIA (Bohemia): Corda, Reichenberg, 1833 (NMP No. *51536*, TYPE); Corda, Breznia, 1837 (NMP No. *51535*, AUTHENTIC). U. S.: Calif. Harkness, Piedmont, Alameda Co., 1882 (identified as *D. opacum*, CAS No. *2044*, TYPE); La., Langlois, Pointe a la Hache, 1886 (identified as *S. toruloides*, NYBG); Langlois, Pointe a la Hache, 1896 (No. *2471*, NYBG, BPI); N. J., Ellis, 1876 (NYBG); Ellis (No. *2422* identified as *S. toruloides*, NYBG); Mass., Linder, Canton, 1934 (FH, as *S. effusa*).

DICTYOSPORIUM TORULOIDES (Corda) Gueguen, Bull. Soc. Myc. Fr. **21**: 98. 1905. ill.

Speira toruloides Corda, Icones Fungorum **1**: 9. pl. 2, fig. 140. 1837.
Speira oblonga Fuckel, Symbolae Mycologicae, p. 349. 1869. ill.
Synphragmidium effusum Peck, Ann. Rept. N. Y. State Mus. **33**: 27. 1879. ill.
Speira effusa (Peck) Sacc., Sylloge Fungorum **4**: 514. 1886.
Dictyosporium Boydii Smith & Ramsbotton, Trans. Brit. Myc. Soc. **5**: 168. 1915.

Sterile hyphae mostly within the substratum, rarely visible, effuse; conidia more or less U-shaped although very irregularly so in some specimens, composed of 3 to many more or less parallel, much contorted branches; branches usually arising from a single basal cell, branches sometimes secondarily branched, multiseptate, constricted at the septa, separating singly or in groups and sometimes breaking into irregular fragments in microscopic mounts, spores having irregular morphology; *Thrysidium*-type conidia also produced; typical conidia measuring 29.5–89 x 14.5–30 μ, size of conidia often varying with specimen.

This species has been found on several types of decaying, decorticated wood in Europe and North America.

TYPE LOCALITY: Hammerstein, Bohemia.

The type specimen of *S. toruloides* Corda (NMP No. *51537*) has spores measuring 29.5–44.5 x 18.5–30 μ, and those of the type specimen of *S. effusum* Peck measure 37–89 x 14.5–22.5 μ. The conidia of the type specimen of Corda's species are also more noticeably flattened (Fig. 1, J) than those of *S. effusum* (Fig. 1, D), but the two species have been placed together because in both the separation of the conidial branches is quite apparent. For the same reason, *D. Boydii* and *S. oblonga* are also referred to the synonymy of *D. toruloides*, although differentiation would not be too difficult on the basis of the type specimens alone. *D. Boydii* (Fig. 2, I) bears similarities to *S. polystichum* as well as to *D. toruloides*, but is placed here because of the greater size of the spores and because the conidial branches almost always show

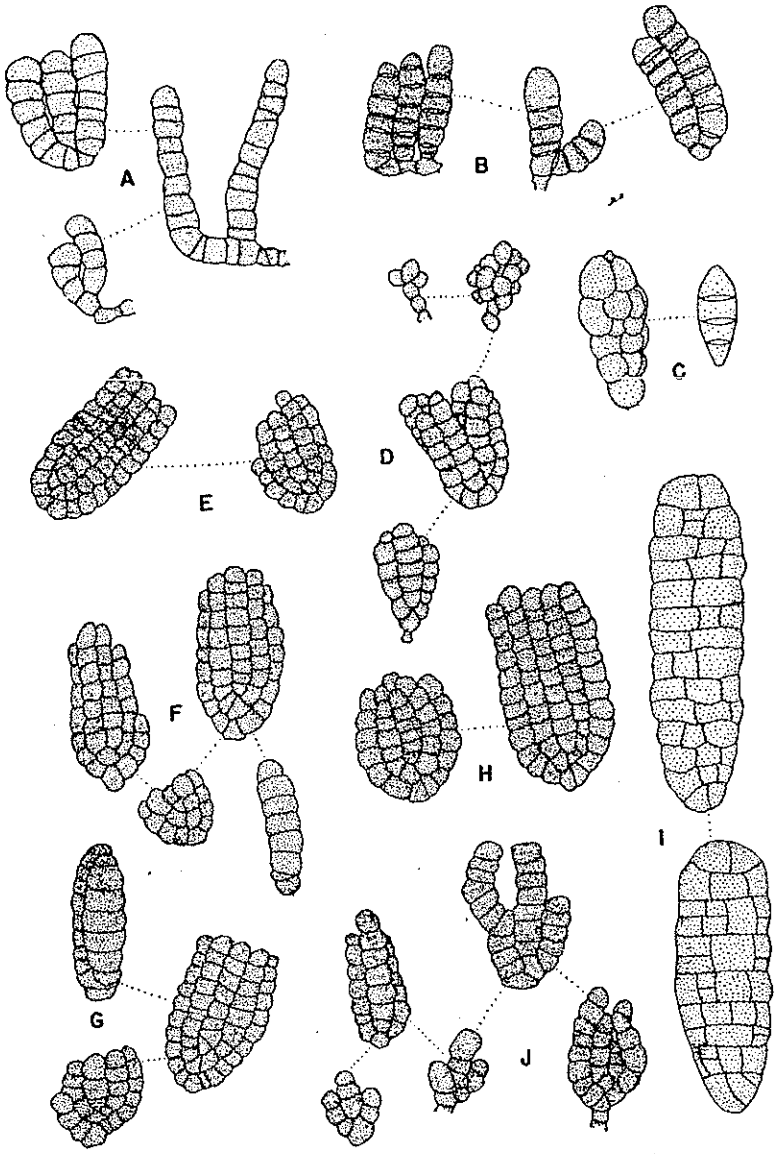

FIG. 1. A. conidia of "*D. elegans*," *Fung. bavar.* #500; B. conidia of "*D. elegans*," *Fung. europ.* #4194; C. conidia of *Botryosporium prorumpens* Schw.; D. conidia of *Synphragmidium effusum* Pk.; E. conidia of *D. elegans* coll. by Langlois; F. conidia of *D. elegans* (Prag. #51536); G. conidia of *D. elegans* (Prag. #51535); H. conidia of *D. opacum* Hke; I. conidia of *Sporidesmium concinnum* Berk.; J. conidia of *D. toruloides* (Prag. #51537). (Drawn × 750 approx. reduced ⅓.)

some separation, a character found almost exclusively in *D. toruloides*. *S. oblonga* (Fig. 2, D) is identical with the organism discussed and figured by Chenantais (3), and more nearly approaches the spore morphology of Peck's *S. effusum*, rather than Corda's type. All of these have been placed together because I feel that a broad rather than a narrow interpretation of species limits is desirable, since the most casual perusal of the organisms of this general group should satisfy almost anyone that this is a safer course until such time as we know more about the dematiaceous growths appearing on bark and decaying wood.

SPECIMENS EXAMINED: CZECHOSLOVAKIA (Bohemia): Corda, Hammerstein, 1837? (NMP No. *51537*, TYPE); U. S.: N. Y., Peck, Verona, (no date on packet, TYPE of *S. effusum*, NYM); GREAT BRITAIN: Dumbartonshire, D. A. Boyd, Killermont, Oct. 1914 (TYPE of *Dictyosporium Boydii*, A. L. Smith, BM); SWITZERLAND: Fuckel, Münchau (no date given, TYPE of *Speira oblonga*, HB).

DICTYOSPORIUM ZEYLANICUM Petch, Ann. Roy. Bot. Gard. Peradeniya **6**: 252. 1917.

Cheiromyces digitatus Martin, Jour. Wash. Acad. Sci. **34**: 359. 1944. ill.
Speira digitata (Martin) Damon, Mycologia **42**: 555. 1950.

Sterile hyphae within the substratum, hyaline to dark-colored, thick-walled, sparsely branching; conidiophores aggregated into sporodochia or sporodochioid clumps; conidia dark-colored, flat, U-shaped, lateral branches having incurved distal ends, branches laterally fused at maturity, 3–5 usually 4, 3–9-septate, constricted at septa, measuring 26–40 x 13–25 x 6–10 μ.

This fungus is known from the type and from one other collection. It has been found on a dead branch scattered over the bark and the surface of the stromata of a sterile pyrenomycete in Ceylon as well as on oak wood in a moist chamber in Iowa.

TYPE LOCALITY: Peradeniya, Ceylon.

The sporodochial habit of this fungus, the smaller and the characteristically shaped spores separate this species from the others. It is included here despite its sporodochial habit because it fits into none of the existing genera of the Tuberculariaceae, and the morphology of its conidia is so like that of *D. elegans* that the erection of a new genus would serve no useful purpose. Although some of the sporodochia appear rather large, they are still distinct enough to make the character useful in distinguishing the species.

Two specimens labelled *D. zeylanicum* (*#4368* and *#5519*) from the Kew herbarium have been seen. The type, according to Petch's original description, is *#4368* (Fig. 2, B) and answers the specific description given; but *#5519* is *D. elegans* and not the species to which Petch assigned it. The type and isotype specimens of *C. digitatus* Martin completely agree with Petch's fungus.

SPECIMENS EXAMINED: CEYLON: Petch, Peradeniya, Dec. 1914 (TYPE *#4368* PD, ISOTYPE *#4368* KW); U. S.: Iowa, Martin, Iowa City, 1943 (TYPE of *C. digitatus*, SUI; ISOTYPES, NYBG, FH).

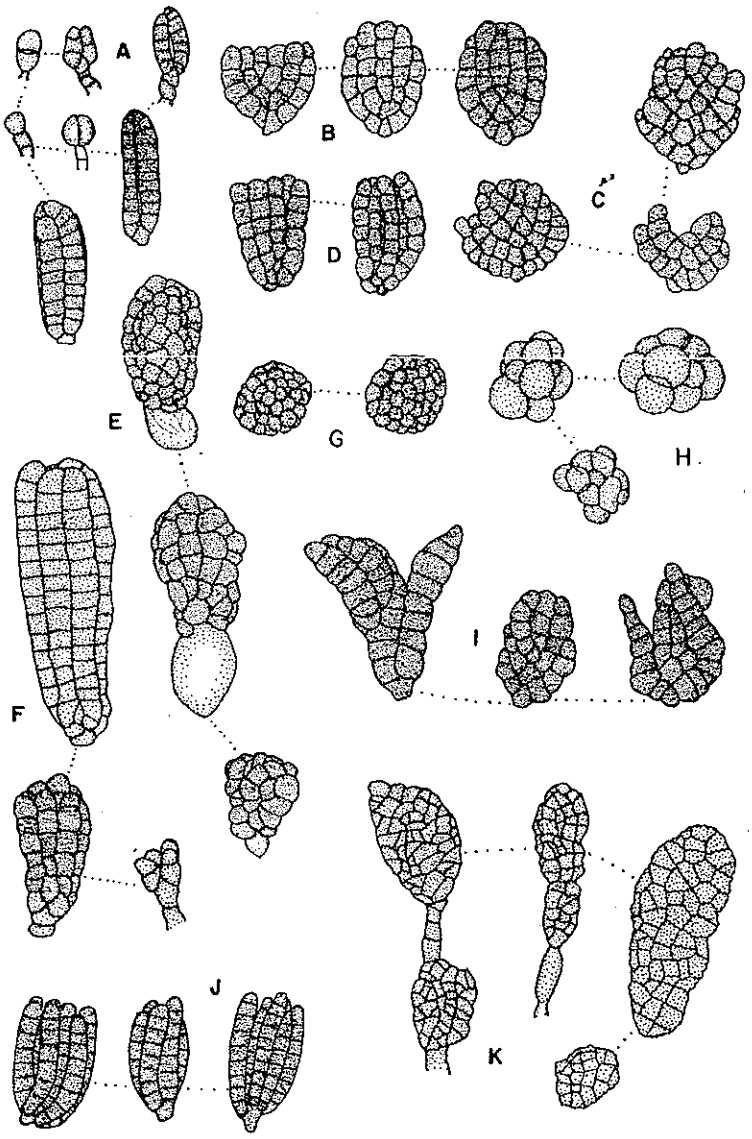

FIG. 2. A. conidia of *D. minor;* B. conidia of *D. zeylanicum;* C. conidia of *D. polystichum;* D. conidia of *Speira oblonga* Fkl.; E. conidia of *Sporidesmium moriforme* Pk.; F. conidia of *D. hepatosporum;* G. conidia of *Speira punctulata;* H. conidia of *D. circinatum;* I. conidia of *D. Boydii;* J. conidia of *D. prolificum;* K. conidia of *Sporidesmium Peziza*. (Drawn × 750 approx. reduced ⅓.)

Dictyosporium polystichum (von Höhnel) comb. nov.
Speira polysticha von Höhnel, Sitz.-ber. Akad. Wien **122**: 49–50. 1913. ill.

Hyphae within the substratum, hyaline to pale fuscous, septate, branching, effuse; conidiophores arranged in sporodochia, reduced to short branches of the vegetative hyphae; conidia dark-colored, branched, branches formed in a cell by cell manner, multiseptate, constricted at the septa, laterally fused, giving the impression of being formed in a mosaic rather than in the typical branched manner, measuring 26–34 x 23–34 μ.

This species is known only from the type collection on rotting stems of *Senecio*.

TYPE LOCALITY: Sonntagsberg, Lower Austria.

The mosaic appearance of the spores (Fig. 2, C), the fact that the branches are never very long (15–16 cells at most), and the irregular arrangement of the branches are what distinguish this species. In most of the spores observed, the branches are not exactly opposite as in the other species, but arise at slightly different levels from one another, thus contributing to the general impression of a mosaic given by the conidia.

SPECIMEN EXAMINED: AUSTRIA, Strasser, Sonntagsberg, 1910 (TYPE, FH).

Dictyosporium minor (Saccardo) comb. nov.
Speira minor Saccardo, Michelia **2**: 559–60. 1882. *Fungi Italici* Fog. 905.

Sterile hyphae within the substratum, fuscous to dark-colored, effuse; conidiophores reduced to short branches of assimilative hyphae, sometimes in sporodochia; conidia single and terminal, arising in a cell by cell manner from the distal ends of the branches; branches 2–4 (usually 2), parallel or subparallel, 5–9-septate, not noticeably constricted at the septa, only slightly incurved at the distal ends, separating with difficulty; conidia dark-colored, measuring 21.5–37 x 7.5–11 μ.

Found on rotting bark and wood of various trees.

TYPE LOCALITY: Montello, Italy.

The unusual 2–3–branched condition of the conidia (Fig. 2, A) with their slightly incurved tips and the growth from their basal ends serve to distinguish this species. Although it has been reported only a few times, I believe it is rather common and can be demonstrated in specimens of many wood- or bark-inhabiting dematiaceous fungi. Although the branches of these spores do not appear to become laterally fused at maturity, they do not separate as easily as do the branches of *D. hepatosporum*.

SPECIMENS EXAMINED: U. S.: *Va.*, Nuttall, Fayette Co., 1894 (AUTHENTIC ?, NYBG).

Dictyosporium hepatosporum (Garovaglio) comb. nov.
Cattanea hepatospora Garovaglio, Rendic. Real. Ist. Lombardi, 2 ser. **8**: 125. 1875. ill.
Speira toruloides sensu Saccardo *non* Corda, Sylloge Fungorum **4**: 514. 1886.
Speira hepatospora (Garovaglio) Lindau, *in* Rabenhorst's Kryptogamen-Flora von Deutschland, Österreich und Schweiz. **1** (8): 201. 1907.
?*Speira cymbidii* Verplancke, Med. Landbouw. Opz. Ghent **3**: 57. 1935. ill.

Sterile hyphae within the substratum, effuse, dark-colored; conidiophores reduced, arranged in sporodochia; conidia dark-colored, thick-walled, branched branches curved, often incurved with a "hook" at the terminus of each branch, multiseptate, constricted at the septa or not, branches more or less isodiametric, cells of branch approximately 5 x 5 μ; conidia having an ovate appearance under low magnification, branches separating easily upon the application of pressure, measuring 63.5–86 x 22–29 μ.

This fungus is found on rotting or decaying wood and other plant parts.

TYPE LOCALITY: Pavia, Italy.

This species is usually distinguished by the distinct "hook" at the distal ends of branches of mature spores, the ovate appearance of the spores, the ease with which the branches separate, and the size of the conidia. Conidia of this species are illustrated in Fig. 2, F.

As indicated above, *D. hepatosporum* has heretofore been referred to as *S. toruloides*. *Speira cymbidii* Verplancke is included only as a tentative synonym of *D. hepatosporum* because the type specimen has not been seen; but the description and the accompanying figure of this species indicate the probable identity of the two species.

SPECIMENS EXAMINED: U. S.: Calif., Stout, Sacramento, 1940 (labelled *S. toruloides*, BPI); Ore., Zeller, (labelled *Speira rubicola*, in herb. NYBG).

Dictyosporium prolificum sp. nov.

Hyphae steriles et fertiles in substrato immersae, conidiophora rare visibilia, sporodochiis disposita, subepidermalia, erumpentia, maculas nigras fere 0.1 mm. diam. gerentia, conidia cylindrica, 30–50 x 15–30 μ, pallide fusca, ramosa, ramis 3–8 parallelis ex una cellula basali orientibus, cellulis productis, multiseptata (5–9 septis), non constricta, isodiametrica, discreta, contactu discedentia.

Habitat cum Didymellae specie in Junci caulibus emortuis.

Sterile and fertile hyphae within the substratum, conidiophores usually not visible, arranged in sporodochia, subepidermal, becoming erumpent, forming black spots approximately 0.1 mm in diameter; conidia pale olivaceous microscopically, having a more or less cylindrical shape, branched, 3–8 in number, arising from a single basal cell, parallel or subparallel, multiseptate with 5–9 septa, not constricted at the septa, isodiametric, independent, separating easily upon the application of pressure; measuring 30–50 x 5–7 μ.

Found on dead stems of *Juncus* in association with a species of *Didymella*.

TYPE LOCALITY: Vineland, New Jersey.

The smaller spores and the fact that the branches are not incurved at their apices separates this species from *D. hepatosporum*, and the larger number of branches and a lack of constrictions at their septa distinguish it from *D. minor*. That it does not belong in *Cheiromyes* is evident from the illustrations of its spores in Fig. 2, J. Ellis had placed the specimen in his herbarium as *Cheiromyces prolifica*.

SPECIMENS EXAMINED: U. S.: N. J. Ellis, Vineland, 1883 (TYPE, NYBG No. *2396*).

SPECIES INQUIRENDAE ET EXCLUDENDAE

SPEIRA CHILENSIS Spegazzini, An. Mus. Nac. Buenos Aires **11**: 194. 1910.

Hypophyllous; conidiophores aggregated on spots; conidia composed of 2–6 parallel, 6–9–septate branches, dark-colored, measuring 20–25 x 4–5 μ (referring to a single branch, considered to be a spore by Spegazzini).

Found on rotting leaves of *Aetoxicum punctatum* at Cerro Caracol de Concepcion, Chile.

This description has been abbreviated from the original and from notes on the packet of the type specimen. Although a close search of the type material was made, no fungus answering Spegazzini's description could be found. The mention of sterile setae, included in the original description, has been omitted here because there is more that a reasonable doubt that they are connected with the *Speira*. Spegazzini's illustrations strongly suggest that his fungus is a synonym of *D. elegans*, although the smaller size of the spores might argue for its distinctness.

SPECIMENS EXAMINED: CHILE: Concepcion, Spegazzini, 1909? (TYPE, NMA).

SPEIRA PUNCTULATA Cooke & Ellis, Grevillea **7**: 6. 1878.

Sporodochia small, punctiform, black, sunken in the center, approximately 1 mm. in diameter; conidia subglobose to sarciniform, fuscous when examined microscopically, muriform, with cells arranged so as to have the superficial appearance of being in parallel rows, measuring 16.5–26 x 14–18.5 μ.

Found on decorticated stems of *Vaccinium* at Newfield, N. J.

The isotype of this species has been examined and the spores are illustrated in Fig. 2, G. When examined uncritically, they bear a vague resemblance to spores of the *Dictoysporium*-type, but are found to be muriform upon closer study. A more exact disposition of this fungus might be in *Coniosporium sensu* Mason & Hughes, but I hesitate to make such a proposal in view of the present lack of understanding of that genus.

SPECIMEN EXAMINED: U. S.: N. J., Ellis, Newfield, 1878 (No. *2884*, NYBG).

SPEIRA ERUMPENS (Schweinitz) Saccardo, Sylloge Fungorum **4**: 516. 1886. *lapsus calami*.

Botryosporium prorumpens Schweinitz, Trans. Am. Phil. Soc. n.s. **4**: 306. 1832. ill.

Saccardo's combination was based upon the single species in the genus, which has not been reported since its description. *Botryosporium* Schw. is a later homonym of *Botryosporium* Corda (Sturm's *Deutsch. Fl.* 3: 11: 9, 1831, fig. 5, not as cited by Saccardo, Sylloge *4*: 54. 1886.), and has generally been referred to the synonymy of *Speira* following Saccardo (21). Examination of material of Schweinitz's species preserved in the Michener collection makes it necessary to re-evaluate the status of the fungus. Spores of the type illustrated in Fig. 1, C were found, and appear to be of the general type found in *Stemphylium*

to the synonymy of which *Botryosporium* Schw. probably should be relegated.

SPECIMEN EXAMINED: U. S.: Pa., Schweinitz, Bethlehem, (TYPE, BPI).

DICTYOSPORIUM YERBAE Spegazzini, An. Mus. Nac. Buenos Aires 12: 138. 1909. ill.

The type specimen of this fungus has been studied and the conidia are morphologically identical with those of *Sporidesmium moriforme* Peck (17) and with those recently described by Hughes (13) for *Sporidesmium paradoxum* Corda (=*Coniosporium paradoxum* (Corda) Mason and Hughes). This has been confirmed by an examination of Peck's type and by examination of a specimen kindly sent to me by Mr. Hughes. It is also identical with conidia of the fungus described by Schweinitz (23) as *Sporidesmium nitens*. Conidia of the type of *S. moriforme* Peck are presented in Fig. 2, E. Although the conidia of *D. Yerbae* and *S. paradoxum* are, in general, of slightly smaller size than those of *S. moriforme;* I do not believe these differences great enough to maintain the species as separate especially in view of their unusual spore morphology. Saccardo (22) added to the synonomy of this fungus by describing a variety, *ampelinum*, of *S. moriforme;* and Ellis and Harkness (10) described a separate species, *Sporidesmium Rauii*. The following specimens have been examined and their spore measurements given:

Sporidesmium moriforme Peck
TYPE 30.5–39.5 x 18.5–23.5 μ.
Sporidesmium moriforme var. *ampelinum* Sacc. & Sacc.
AUTHENTIC 25.5–35 x 15.5–30 μ
Sporidesmium Rauii Ellis and Harkness
TYPE 29.6–65 x 16.5–25 μ
Dictyosporium Yerbae Spegazzini
TYPE 25.5–30 x 14.0–30 μ
Sporidesmium paradoxum Corda (from Hughes, 13)
16–37 x 12–32 μ
Sporidesmium nitens Schw.
TYPE 23.5–46.5 x 16.5–21 μ

That Hughes' interpretation of *S. paradoxum* is correct has been confirmed by his examination of Corda's type specimen (personal communication from S. J. Hughes), and all of the above named species could be referred to it as synonyms were it not that *Sporidesmium nitens* Schw. antedates Corda's name. Unfortunately, final disposition of these names must await clarification of *Coniosporium* since Hughes (1933) transferred *S. paradoxum* to that genus as *Coniosporium paradoxum* (Corda) Mason and Hughes. This usage of *Coniosporium* was complicated by the fact that *Sporidesmium peziza* Cooke and Ellis was transferred to *Coniosporium* at the same time, and it is questionable that these two species can be considered congeneric with *C. olivaceum* Link, the type species. *C. olivaceum* produces dark-colored, opaque, rough-walled dictyospores borne singly on the conidiophore whereas

the spores which I have observed in the isotype of *S. peziza* are borne in chains. These are illustrated in Fig. 2, K, and resemble spores of the type known for *Sirodesmium* if that genus can be re-established. In any event, I do not believe that *S. nitens* (=*S. paradoxum*) can be considered congeneric with *S. peziza* as Hughes implies, and it is questionable that it is congeneric with *C. olivaceum*, so that final disposition must await more complete studies on dictyosporous Dematiaceae.

SPECIMENS EXAMINED: U. S.: N. Y., Peck, Sandlake, 1873 (TYPE of *S. moriforme*, NYM); Zabriskie, Flatbush, 1889 (No. *109*, NYBG); N. J., Ellis, Newfield, 1889 (NYBG); Kansas, Bartholomew, 1894 (NYBG); Penn., Schweinitz, Bethlehem, *3082*, (TYPE, ANS); ITALY: D. Saccardo, Trevisio, 1904 (AUTHENTIC, NYBG); ARGENTINA:Spegazzini, San Pedro, 1907 (TYPE of *D. Yerbae*, NMA); U. S.: N. J., Ellis, (as *Sporidesmium Peziza* C. & E., NYBG, ISOTYPE).

DICTYOSPORIUM CIRCINATUM Cooke & Harkness, Grevillea **12**: 95. 1883.

The type which, to my knowledge, is the only specimen of this fungus has been examined, and on this basis the species is excluded from *Dictyosporium*. The conidia show vague similarities to spores of some the helicosporous fungi (as pointed out by the original authors), but not enough to include it among them; and they are not those of a *Dictyosporium* as is evident from Fig. 2, H. It is, however, identical with the fungus described by Ellis and Everhart (9) as *Sporidesmium inquinans;* as it is the older of the two names, the specific epithet, *circinatum*, will have to be used in any new combination. No proposal is made here for the reasons stated previously. A description of the type specimen of *D. circinatum* is included for the use of other workers.

Sterile hyphae mostly within the substratum, effuse, hyaline to pale fuscous; conidiophores lacking, conidia borne on short branches of the assimilative hyphae singly and terminally; apparently formed by the enlargement and division of the terminal cell of the conidiophore, cells of spore arranged in a vague helicoid fashion, multicellular, subglobose to ovate, measuring 25.5–32 x 18.5–25.9 μ.

The type specimen is on decorticated wood of *Platanus racemosa*.

TYPE LOCALITY: Sunol, California.

SPECIMEN EXAMINED: U. S.: Calif. Harkness, Sunol, 1881 (TYPE, CAS).

SPEIRA (CATTANEA) PELAGICA Linder, Farlowia **1**: 407, 1944. ill.

This species, believed to belong to the *Cattanea* section of *Speira*, was isolated from driftwood at Provincetown, Mass. and appears to belong to the dictyosporous, dematiaceous hyphomycetes. It does not belong in *Dictyosporium* in the sense in which that genus is considered here; but I hesitate to alter its generic assignment at this time.

The type and an authentic specimen of *S. pelagica* have been examined, and nothing can be added to Linder's complete description (1). I differ, however, with his disposition of the fungus in that I do not believe it to be in any way similar to species here assigned to *Dictyosporium*. It is true that the spores upon which he based his generic assignment answer in a rather general way the descriptions of

Cattanea, but they show no similarity to the spores of *C. hepatospora* as that species is now understood. Furthermore, I did not find the spores of the type Linder described as being at all numerous; there was by far a greater number which would agree better with the description of *Coniosporium sensu* Mason & Hughes. The fungus is unquestionably one of the *Coniosporium-Sporidesmium* complex, but removal to another genus must await a more thorough study of its numerous and poorly understood species.

SPECIMENS EXAMINED: U. S.: Mass., Barghoorn, Provincetown, July, 1942 (TYPE, FH); Barghoorn, Provincetown, 1943 (AUTHENTIC, FH).

ACKNOWLEDGEMENTS

A study of this sort can only be made through the generosity of the curators of the many herbaria in which type specimens are deposited. I, therefore, wish to express my gratitude to Dr. C. E. B. Bonner of the Botanic Garden of Geneva (HB), Dr. Juan Lindquist of the Instituto Spegazzini (NMA), Dr. J. W. L. Pieris of Peradeniya (PD), Dr. G. Taylor of the British Museum (BM), the Director of the National Museum in Prague (NMP), the Director of the Kew Gardens (KW), Dr. D. P. Rogers of the New York Botanical Garden (NYBG), Dr. S. J. Smith of the New York State Museum (NYM), Mr. John Howell of the California Academy of Sciences (CAS), the late Dr. F. W. Pennell of the Academy of Natural Sciences in Philadelphia (ANS), Dr. W. L. White of the Farlow Herbarium (FH), Mr. J. A. Stevenson of the Department of Agriculture (BPI), and Dr. G. W. Martin of the State University of Iowa (SUI). I also wish to thank Dr. Martin for his suggestions and criticisms and for reading the manuscript, Dr. Rogers for reading the manuscript, and Miss Edith K. Cash of the U. S. Department of Agriculture for supplying the reference to *Speira cymbidii* Verplancke.

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